

CONNECT, the Science Foundation Ireland research centre for Future Networks and Communications (<http://connectcentre.ie>), has **one open Ph.D. student position starting on 1st March 2017** to conduct research within the following project:

Exploring the relation between complexity, degeneracy and fitness in future communication networks

This PhD project will contribute to the CONNECT vision to develop resource management models that can allow us to understand to what extent the resources available from the network's pool are interchangeable. In order to do so, we will examine the ability of structurally different elements to perform the same function and yield the same output. This is a concept that we borrow from biology and is known as *degeneracy*.

The work builds on a framework our research lab is working on, which applies complex systems science to the modelling, analysis and operation of communication networks. In particular, the study of complexity metrics is deeply inter-related with ideas of redundancy, degeneracy and robustness which will allow us to better understand and design inter-changeable resource sets in our networks.

CONNECT is a flagship research centre for communications networking, services, applications and technologies. CONNECT is funded under the Science Foundation Ireland Research Centres Programme and is co-funded under the European Regional Development Fund. CONNECT is also funded by industry and supports over 150 researchers across ten higher education institutes. CONNECT main research areas are: Future networks, including wireless and optical technologies; Network-aware services and service-aware networks; Internet of Things, and Testbed-based experimentation. CONNECT works with about **40 industry partners**.

Trinity College Dublin, is Ireland's No.1 University and ranked 98th in the QS World University Ranking across all indicators.

What we offer:

- 4 years PhD programme.
- An excellent international working environment.
- Stipend in line to that of the Trinity College Dublin and Irish Universities standards.

Successful candidates should have:

- Bachelor degree (Master preferred) in Electrical Engineering, Computer Engineering, Computer Science, or a related field, with a minimum mark of 2.1 (i.e. with a score higher than 60%).
- Strong mathematical skills.
- Strong knowledge of communication theory, probability and stochastic processes.
- Strong programming skills.
- Basic knowledge of wireless systems simulation methodology and tools.
- Basic knowledge of radio resource management.
- Basic knowledge of cellular and sensor networks.
- Strong oral and written English communication skills.

The PhD project will jointly be supervised by Dr Irene Macaluso, Prof Nicola Marchetti and Prof Linda Doyle.

Interested candidates should submit the following via email to Prof Nicola Marchetti (marchetn@tcd.ie):

- Maximum 2 page curriculum vitae with major Master level telecommunication courses grades;
- Maximum 1 page cover letter stating motivations and qualifications;
- Names and contact details of at least two references.